

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICANT: Barclay et al.

EXPRESS MAIL LABEL NO.:

FILED: HEREWITH

FOR: NOVEL POLYMERS AND PHOTORESIST COMPOSITIONS

THE HONORABLE COMMISSIONER OF PATENTS AND TRADEMARKS  
WASHINGTON, DC 20231

SIR:

**PRELIMINARY AMENDMENT**

Applicants file the above-identified application herewith. Please amend the application as follows.

**IN THE SPECIFICATION**

At page 1, line 1 of text, please add the following sentence:

--The present application claims the benefit of U.s. provisional application number 60/271,404, filed February 25, 2001, which is incorporated herein by reference in its entirety.--

**IN THE CLAIMS**

Please cancel without prejudice claims 13-14 and 17-25.

Please amend the following claims.

3. (amended) A photoresist of claim 1 wherein the resin comprises photoacid-labile groups.

5. (amended) A photoresist of claim 2 wherein the resin comprises a photoacid-labile ester group.

6. (amended) A photoresist of claim 1 wherein the resin comprises a polymerized cyclic olefin.

7. (amended) A photoresist of claim 1 wherein the resin comprises a polymerized monomer comprising ethylene unsaturated carbonyl or di-carbonyl.

8. (amended) A photoresist of claim 1 wherein the resin is a terpolymer.

9. (amended) A photoresist of any one of claim 1 wherein the resin is a tetrapolymer.

10. (amended) The photoresist of claim 1 wherein the polymer further comprises one or more units selected from the group consisting of an acid; nitrile; an anhydride; a lactone; or a photoacid labile group that contains a leaving group that has other than an alicyclic moiety.

11. (amended) The photoresist of claim 1 wherein the polymer is substantially of aromatic groups.

12. (amended) A method of forming a positive photoresist relief image, comprising:

- (a) applying a coating layer of a photoresist of claim 1 on a substrate; and
- (b) exposing and developing the photoresist layer to yield a relief image.

15. An article of manufacture comprising a microelectronic wafer substrate or flat panel display substrate having coated thereon a layer of the photoresist composition of any one of claim 1.

### REMARKS

The specification has been amended to include the priority claim. For the sole purpose of reducing initial filing fees, claims 13-14 and 17-25 have been cancelled without prejudice, and claims 3, 5-12 and 15 have been amended to eliminate multiple dependencies.

Early consideration and allowance of the application are solicited.

Respectfully submitted,



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**VERSION WITH CHANGES MARKED**

3. (amended) A photoresist of claim 1 [or 2] wherein the resin comprises photoacid-labile groups.
5. (amended) A photoresist of claim 2 [or 3] wherein the resin comprises a photoacid-labile ester group.
6. (amended) A photoresist of claim 1 [any one of claims 1 through 5] wherein the resin comprises a polymerized cyclic olefin.
7. (amended) A photoresist of claim 1 [any one of claims 1 through 6] wherein the resin comprises a polymerized monomer comprising ethylene unsaturated carbonyl or di-carbonyl.
8. (amended) A photoresist of claim 1 [any one of claims 1 through 7] wherein the resin is a terpolymer.
9. (amended) A photoresist of any one of claim 1 [claims 1 through 8] wherein the resin is a tetrapolymer.
10. (amended) The photoresist of claim 1 [any one of claims 1 through 9] wherein the polymer further comprises one or more units selected from the group consisting of an acid; nitrile; an anhydride; a lactone; or a photoacid labile group that contains a leaving group that has other than an alicyclic moiety.

11. (amended) The photoresist of claim 1 [any one of claims 1 through 11]  
wherein the polymer is substantially of aromatic groups.

12. (amended) A method of forming a positive photoresist relief image,  
comprising:

- (a) applying a coating layer of a photoresist of claim 1 [any one of claims 1 through 11] on a substrate; and
- (b) exposing and developing the photoresist layer to yield a relief image.

15. An article of manufacture comprising a microelectronic wafer substrate or flat  
panel display substrate having coated thereon a layer of the photoresist composition of any one  
of claim 1 [claims 1 through 11].